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# **TRMM Flight Operations Monthly Status Review (MSR)**

January 29, 2002



# FOT Subsystem Overview

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- Operations Status
  - Flight Ops Summary - Lou Kurzmiller
  - Electrical - Andy Calloway
  - Thermal - Dave Sepan
  - RCS - Dave Sepan
  - Power & Deployables - Justin Knavel
  - ACS & FDS / C&DH - Mark Fioravanti
  - RF / Comm - Nega Berhanu
  - LIS - Nega Berhanu
  - CERES & VIRS - Mark Fioravanti
  - TMI - Dave Sepan
  - PR - Andy Calloway
  - Ground System - Andy Calloway
  - Upcoming Activities - Andy Calloway



# Flight Operations Summary

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- Supported 549 SN events in January
  - 1 Yaw Maneuver to -X
  - 9 Delta-V Maneuvers
- No Anomaly Rpts, 1 Event Rpt & No Generic Late Acqs
  - ER #256: No I-Chnl lock at AOS



# Flight Operations Summary

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- Notable Events
  - Continued support of ACS pointing & control concern
- FOT continues at full staff.
- Conducted GCMR/UPD test with NCC at WSGT.
  - CD Mgr mis-configured TRMM to an incorrect port assignment afterward. No UPD capability for several events – no impact.



# Thermal / Electrical Subsystems

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- The Thermal subsystem remains nominal
  - No operational issues since arrival at 402.5 km
  
- The Electrical subsystem remains nominal
  - No operational issues since arrival at 402.5 km



# RCS Subsystem

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- RCS performed 9 successful Delta-V maneuvers (#364 - #372)
  - Current fuel remaining is 308 kg.
  - Current High Pressure Transducer level is 210.9 psia.
- The current EOL estimate at 402.5 km is August 2003 using 157 kg of fuel as a baseline for controlled re-entry.
- Upcoming Events
  - Continue to review and train with Delta-H procedure, EOL scripts, and the “one-shot” procedure.
  - Review all required steps for a 30+ minute Delta-V maneuver and test with the simulator.



# Power Subsystem

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- Auto-SPRU enabled from 02-018 (January 18th) to 02-025 (January 25th) to prevent overcharging at high Beta angles.
- Open issues
  - Essential Bus Voltage Monitor Backup (S/C Processor Current)
    - » Complete and uplink Filtering Code (End of February)
  - Solar Array off-pointing
    - » Test Delta V and Yaw maneuvers with simulator
    - » Longer duration on-board test



# Deployables Subsystem

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- Solar array drives and HGA continue to operate nominally.



# ACS Subsystem

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- ACS is performing Nominally.
- EPVs still being uplinked twice a day.
  - Using Geopotential method (Selections are those that are closest to 08:00z and 20:00z daily).



# FDS/C&DH Subsystems

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- UTCF/FS Status;
  - 2 UTCF Adjustments were performed.
    - » 1<sup>st</sup> on 02-004 (Jan., 4<sup>th</sup>) and the 2<sup>nd</sup> on 02-023 (Jan., 23<sup>rd</sup>)
    - » Current UTCF value is 31535996.811805 sec
    - » No Leap Second update in June.
  - No FS Adjustments were performed.
    - » Current FS value is x'7DE'.
    - » The next Adjustment is expected on 02-060 (Sat., Mar 1<sup>st</sup>), and will be adjusted to x'7EA'.
- Planned RTS Changes
  - Nominal TDRS AOS RTS format changes to allow easier modification as DS storage status changes, and to simplify transponder offsets if required.
  - Initially will be performed with RTSs 65 - 68, other AOS RTSs may also be converted later.



# RF Subsystem

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- No Generic Late Acquisitions this month.
- 1 RF Event Report this month.
  - ER # 256 – TDS / 022 / 1300z event was acquired at 13:04:54, 4min 24 Sec late (TTR#24192) due to unknown reason. All data was recovered.
- Frequency offsets (monthly average)
  - Transponder #1 = + 713.237 Hz
  - Transponder #2 = - 763.955 Hz
- Upcoming Events
  - Offset of transponder 2 frequency may occur this year.



# LIS Instrument

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- One Routine MSFC real-time command request was performed on 02-024 ( January 24<sup>th</sup> ) to reduce packet sequence errors.
- Will be contacting MSFC personnel periodically to determine if they still need telnet / X-windows remote page display capability.



# CERES/VIRS Instruments

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- **CERES.**
  - Powered OFF.
- **VIRS**, continues to operate nominally.
  - Two sets of VIRS Solar Calibrations were performed on 02-008 (Tues., Jan 8<sup>th</sup>).



# TMI / PR Instruments

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- No Open Issues with the TMI instrument

- No Open Issues with the PR instrument.



# Ground System / Security

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- No new Ground System issues to report this month
  
- 3<sup>rd</sup> Security Risk Reduction Analysis Corrective Action Plan (CAP) meeting held to finalize action item assignments and time completion goals
  - Most actions to be completed by April



# Upcoming Activities

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- 0-2 Months

- Complete migration from Macintosh to PC-Based server/desktops/software
- Uplink PSIB Alternate Telemetry Patch and dwell tables (February)
- Perform remaining FSW revisions due to new Kalman Filter mode of operations and Boost activities
  - » 2000 Epoch Magnetic Field Patch
  - » Table 51 DSS Tolerance Versions
  - » Table 54 Update for Roll/Pitch/Yaw to 15°/8°/8°
- Place remaining permanent table / patch changes into EEPROM
- Select which Trending system to purchase / implement for MOC upgrade
- Support finalization of TRMM End of Life and Reentry Plan
- Perform SA 55° offset long-duration test
- Install new TDRS HGA AOS RTSs



# Upcoming Activities

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- 2-3 Months
  - Begin implementing new MOC trending system
  - Continue trade studies for upgrading other MOC ground system and software components
  - Participate in End of Life Plan review(s)
  - End Of Life Plan Testing, and Simulations continue
  - Continue to close open CCRs, MOCRs, and MSR Action Items